

IN THE CLAIMS

Claims 1-21 (Cancelled).

22. (Currently Amended) An isolated antibody which specifically binds to an isolated polypeptide selected from the group consisting of:

- a) a polypeptide comprising the amino acid sequence of SEQ ID NO:1,
- b) a polypeptide comprising a naturally occurring amino acid sequence at least 90% identical to the amino acid sequence of SEQ ID NO:1,
- c) a fragment of a polypeptide having the amino acid sequence of SEQ ID NO:1, wherein said fragment ~~binds to microtubules~~ has protease activity, and
- d) an immunogenic fragment of at least 15 contiguous amino acids of a polypeptide having the amino acid sequence of SEQ ID NO:1.

23. (Withdrawn) A method for a diagnostic test for a condition or disease associated with the expression of HUPAP in a biological sample, the method comprising:

- a) combining the biological sample with an antibody of claim 22, under conditions suitable for the antibody to bind the polypeptide and form an antibody:polypeptide complex, and
- b) detecting the complex, wherein the presence of the complex correlates with the presence of the polypeptide in the biological sample.

24. (Previously Presented) The antibody of claim 22, wherein the antibody is:

- a) a chimeric antibody,
- b) a single chain antibody,
- c) a Fab fragment,
- d) a F(ab')₂ fragment, or
- e) a humanized antibody.

25. (Previously Presented) A composition comprising an antibody of claim 22 and an acceptable excipient.

26. (Withdrawn) A method of diagnosing a condition or disease associated with the expression of HUPAP in a subject, comprising administering to said subject an effective amount of the composition of claim 25.

27. (Previously Presented) A composition of claim 25, further comprising a label.

28. (Withdrawn) A method of diagnosing a condition or disease associated with the expression of HUPAP in a subject, comprising administering to said subject an effective amount of the composition of claim 27.

29. (Previously Presented) A method of preparing a polyclonal antibody with the specificity of the antibody of claim 22 comprising:

- a) immunizing an animal with a polypeptide having the amino acid sequence of SEQ ID NO:1, or an immunogenic fragment thereof, under conditions to elicit an antibody response;
- b) isolating antibodies from said animal; and
- c) screening the isolated antibodies with the polypeptide, thereby identifying a polyclonal antibody which binds specifically to a polypeptide having the amino acid sequence of SEQ ID NO:1.

30. (Currently Amended) [[a]] A polyclonal antibody produced by a method of claim 29.

31. (Previously Presented) A composition comprising the antibody of claim 30 and a suitable carrier.

32. (Previously Presented) A method of making a monoclonal antibody with the specificity of the antibody of claim 22 comprising:

- a) immunizing an animal with a polypeptide having the amino acid sequence of SEQ ID NO:1, or an immunogenic fragment thereof, under conditions to elicit an antibody response;
- b) isolating antibody producing cells from the animal;
- c) fusing the antibody producing cells with immortalized cells to form monoclonal antibody-producing hybridoma cells;

- d) culturing the hybridoma cells; and
- e) isolating from the culture monoclonal antibody which binds specifically to a polypeptide having the amino acid sequence of SEQ ID NO:1.

33. (Previously Presented) A monoclonal antibody produced by a method of claim 32.

34. (Previously Presented) A composition comprising the antibody of claim 33 and a suitable carrier.

35. (Previously Presented) The antibody of claim 22, wherein the antibody is produced by screening a Fab expression library.

36. (Previously Presented) The antibody of claim 22, wherein the antibody is produced by screening a recombinant immunoglobulin library.

37. (Withdrawn) A method for detecting a polypeptide having the amino acid sequence of SEQ ID NO:1 in a sample, the method comprising ~~the steps of~~:

- a) incubating the antibody of claim 22 with a sample under conditions to allow specific binding of the antibody and the polypeptide; and
- b) detecting specific binding, wherein specific binding indicates the presence of a polypeptide having the amino acid sequence of SEQ ID NO:1 in the sample.

38. (Withdrawn) A method of purifying a polypeptide having the amino acid sequence of SEQ ID NO:1 from a sample, the method comprising:

- a) incubating the antibody of claim 22 with a sample under conditions to allow specific binding of the antibody and the polypeptide; and
- b) separating the antibody from the sample and obtaining the purified polypeptide having the amino acid sequence of SEQ ID NO:1.

Claims 39-40 (Cancelled).